

has remarked it may show itself only as "an intensely itching or burning sensation confined to the finger pulps, which become puffed, tense and slightly reddened."

H. A. Sharpe has drawn attention to the occurrence of this form of eczema in the country from the wild primrose.² He thinks that it often occurs from handling the udders of cows that have walked among the dew-laden flowers.

In making a diagnosis it is often a pitting of our wits against the traps laid for us by Nature, and frequently it is Nature that wins out, and she may do so when we feel most confident, as for instance, for a long time in the first case here recited. Conditions in the alimentary canal are so often the key to eruptions on the skin and mucous membranes, that they constitute a temptation not to look for topical causes. When, however, in such a case the cause happens to be found by an outsider what a deal of opprobrium and ridicule the physician is subjected to! And we freely admit that in this case it was not an intellectually worked out diagnosis, but a chance thought that finally solved the problem.

PRIMROSE—*Primula Sinensis*.

One of the finest spring blooming pot plants. Easy to grow, pretty in leaf, handsome in flower, and continuously in bloom for months at a time. These merits alone would earn a place in every window; but when we add that it is one of the plants never attacked by insects and that it will bloom in a sunless window—where a *Geranium* or *Heliotrope* would never show a bud—it is clear that the smallest collection would never be complete without it. Our seed is saved from the choicest strains and can be relied upon to produce the largest flowers and finest colors.—Mixed—Large packet 25c. Plant from February to May.

The advertised description of the plant is included because it shows so well the attitude of the florist. This desire on the part of the flower dealer to sell the plant together with the beauty of the flower and its good blooming qualities that appeal so strongly to women and induce them to buy, will, we have no doubt, successfully prevent the elimination of this interesting dermatitis.

It is also interesting to note that the plant is seldom attacked by insects. Probably the same poison that causes the dermatitis in human beings also acts poisonously on insects, and so constitutes a defense for the life of the plant.

Discussion.

Dr. Emmet Rixford: It seems too bad to relegate such a pretty flower as the primrose to oblivion just because it occasionally causes an annoying dermatitis. I suppose it is true that cases of primrose dermatitis are more frequent now than formerly since the primrose, especially the Chinese variety, has been so much more commonly used as a house plant. However, there must be great differences in the susceptibility of individuals to the poisoning. In my house we have had a number of such plants but have had no trouble with dermatitis. The first case of the kind I saw I thought was poison oak because of the similarity of the eruptions.

Dr. Montgomery, closing discussion: There are many kinds of primroses; the most obnoxious ones to the skin, however, I understand to be the *Primula obconica* and the *Primula sinensis*.

There is a point that Dr. Rixford has just drawn my attention to, and that is the varying sensitive-

ness of people to this poison. This unusual cutaneous sensitiveness seems often to be dependent upon noxious fermentations in the alimentary canal. That it may exist without any autointoxication whatever seems also to be probable.

¹ *Primula Dermatitis* by O. H. Foerster, Jour. American Medical Assoc., Aug. 20, 1910.

² *Primula Dermatitis. Its Occurrence in Rural Districts.* Jour. A. M. A., Dec. 14, 1912.

THE EARLY DIAGNOSIS OF PULMONARY TUBERCULOSIS.*

By ROBERT A. PEERS, M.D., Colfax.

The title "The Early Diagnosis of Pulmonary Tuberculosis" should probably read "The Earlier Diagnosis of Pulmonary Tuberculosis" because, whether we believe that tuberculosis is essentially an infection of childhood with the later or secondary manifestations in adult life, or whether we believe that most infections take place later in life than childhood, we must all admit that the tubercle bacillus has been implanted and has been nourished and propagated within the human body for months, at least, and in some cases for years before the symptoms develop sufficiently to call for treatment or to bring the patient to the physician. Thus it seems rather out of place to speak of early diagnosis when the disease has existed for many months.

We do know, however, that many patients arrive at the doctor's office at a relatively early period of the disease and while there is yet time, if the cause of the illness is recognized, to prevent its spread and to secure an arrest of the process. We do know, also, that many of such cases go unrecognized and that they are treated often as malaria, chronic bronchitis, asthma, anemia, indigestion, or one of many other disorders. It is my desire to attempt to outline the means by which an *earlier diagnosis* can be reached.

In the first place then it is necessary for the physician to have in mind that tuberculosis is the most common disease with which we have to deal—one that infects perhaps 90% of our clients at one time or another and which causes the death of one out of every six persons in this state. It is absolutely necessary that these facts be appreciated in order that the physician may think of tuberculosis whenever making a diagnosis, for only in this way will tuberculosis be discovered early as a rule rather than as an exception. The patient is febrile—think of tuberculosis as one of the febrile diseases at the same time that you consider typhoid, malaria, and the like. The patient is run down, tired and nervous—think of tuberculosis as well as anemia, malaria, overwork or other similar causes. The patient clears his throat and raises in the morning—think of tuberculosis as well as catarrhal conditions of the naso-pharynx, pharynx, larynx, and other parts of the upper respiratory tract. In fact think of tuberculosis as a possible cause of any febrile condition, any depreciation in weight, strength, or working force, any cough or clearing of the throat, and eliminate tuberculosis or discover it as the cause of the symptoms.

Commencing then with the due appreciation of

* Read before the Sacramento Society for Medical Improvement, June 15, 1915.

the morbidity and mortality of tuberculosis, the most valuable aids in making an earlier diagnosis are: first, plenty of time for examination; second, a capacity for taking pains; third, a knowledge of the methods necessary to elicit physical signs; fourth, the ability to properly interpret the meaning of physical signs and symptoms.

Of these aids I unreservedly name the first—viz.: plenty of time for examination—as the most important because without plenty of time for examination one cannot expect to diagnose tuberculosis in the relatively early stages. At Colfax we allow from an hour to an hour and a half for an examination and not infrequently from two to three hours are expended on a patient before a diagnosis is reached. First comes the taking of the history including the recording of personal matters as social condition, sex, age, nationality, and occupation; then the family history, going carefully into the health of every living member of the family and as carefully into the cause of death of those who have died. Especial attention should be paid to questioning regarding cases of asthma, chronic bronchitis, chronic pneumonia, gastric disorders, as to whether the living members are thin or well-nourished, and many other points which experience will prove to be of value. The past history will furnish information, in addition to that pertaining to diseases which are well defined, as to atypical fevers, coughs which have hung on, run down spells accompanied by coughs and night sweats, the occurrence of pleurisy, with or without effusion, the persistence of clearing of the throat, variations in weight, including the average, maximum, and minimum weights since adult life has been reached. The history of the present illness will include generally the history of the past several months. The most common first symptom is a tired feeling usually coming on in the afternoon. Patients describe this variously as a "tired feeling," "a lazy feeling," or "a lack of ambition," and in many other ways. This tired feeling may precede, accompany, or follow a loss of weight or may be entirely independent of any change in weight. It usually precedes the occurrence of a frank cough by several weeks or months but is usually secondary, in point of time, to a clearing of the throat. This clearing of the throat, especially in the morning, has been an early symptom in hundreds of our cases. The other symptoms of cough, rapid pulse, loss of weight, afternoon temperature, pains in the chest are so well known that they may be passed without comment. It is not the presence of any one or all of these symptoms that makes for diagnosis, but a combination, because we cannot make an early diagnosis from the presence of symptoms but must judge our case by a consideration of the history, the symptoms present and the physical, laboratory, and biologic findings.

The physical examination should include the pulse rate, temperature, weight as compared with the height and also compared with the previous weight and the normal weight, the appearance of the skin and complexion, the size and contour of pupil and the reaction, the size of the thyroid,

presence or absence of enlarged glands, the fingers: to see if clubbed, the nails to see if curved or straight, the general appearance to see if toxic or dyspneic, and the chest examination. The pulse rate may be accelerated or may be normal in number of beats although usually the pulse is relatively rapid even in early cases. The blood pressure is usually low; in fact, in our cases of tuberculosis with a normal or increased pressure a urinalysis is at once called for. The temperature may be sub-normal, normal, or slightly elevated. In order to learn anything from the temperature one should take several readings a day for a number of consecutive days. One temperature reading is more apt to mislead than to be of value. The weight is important but a patient may have advanced tuberculosis and be above normal weight. The early tuberculous patient is more apt to be well nourished than thin and this must not be forgotten in making the diagnosis. The skin will perhaps be pale but may be ruddy and of good color. The condition of the thyroid may explain a rapid pulse and slight fever and this gland should always be examined. Enlarged cervical glands are found in nearly every case of tuberculosis we see but as we see practically none but the tuberculous we cannot speak regarding their presence in the non-tuberculous. Clubbed fingers and curved nails are to be found usually in late cases. Patients markedly dyspneic and toxic usually do not belong to the early cases—although sometimes in early acute cases these symptoms are found.

The examination of the chest is important and plenty of time should be allowed in order that it may be thorough. Every patient, male and female, should be stripped to the waist and have the lower clothing loose at the waist. This is very important but is frequently not insisted upon. The patient should be placed in a good light and may be seated or standing. I prefer to have my patients seated. It is easier for me to examine them when in this position and is less tiring. A tired examiner does not do his best work.

The appearance of the chest is noted and in early cases may look normal. The expansion is also noted as to degree and also one side in relation to the other. Where the involvement is not great the expansion may appear normal but frequently there is a lagging behind or a deficient expansion of one or both lungs or of a part of one lung. Percussion very frequently reveals dullness at one or other apex and it is always advisable to percuss along the anterior border of each trapezius muscle because it is here earlier than elsewhere that one elicits a restriction of the resonant area. A restricted apical area of resonance means usually that there is infiltration or contraction from scar tissue. Tuberculosis is the most common cause of either of these conditions. This outlining of the apical area of resonance is, in my mind, of considerable importance and should never be neglected. A careful observance of this rule will soon convince any examiner that he must not look so much for a dulling of the whole apex as for a restriction or limitation of the resonant area. After the percussion and outlining of the apices it is well to

percuss the entire chest from below upward and note differences of pitch. Also it is well to make percussion before inspection of the respiratory excursion because deep breathing influences quite considerably, at times, the limits of resonance and dullness.

Regarding auscultation I will state that it is of extreme importance and should be thoroughly carried out. One should have a quiet room, a good stethoscope, and a knowledge of the best method of eliciting physical signs. The signs found in relatively early cases are higher pitched breathing, a lengthening of the expiratory murmur, roughened breathing, and rales. The first two are heard best during quiet or slightly lengthened breathing. The latter (rales) may be heard in quiet breathing but, in that case, the lesion is usually not an early one. It is often necessary to have the patient cough and then breathe deeply or, after deep expiration, cough and take a deep breath. Most of the physical signs which are overlooked have been lost because the examiner did not know how to elicit them rather than because he failed to recognize them when heard. Rales that are permanent (i. e., persist after coughing) are more probably due to tuberculosis than those which are transitory or disappear on coughing. Rales found at the apex are, as a rule, but not of necessity, more probably due to tuberculosis than if found only at the base. Rales in asymmetrical areas are of more importance than if found over a corresponding area of each lung. It is to be remembered though, and emphasized, that rales found in large numbers indicate that the infection is not an early one.

The fluoroscope and the X-ray plate are valuable aids in diagnosis but do not distinguish between healed and active lesions. With the fluoroscope one can frequently observe in addition to the shadows due to disease the lack of chest expansion and the failure of the diaphragm to properly rise and fall. The X-ray plate is more valuable in doubtful cases because it can be studied for a longer period of time and furnishes a permanent record.

An examination of the sputum should always be made and, if negative, repeated one or more times. The best specimen is the one obtained the first thing in the morning when the patient "clears out the chest." The patient should be instructed that the specimen should come from "deep down" and not from the throat. Frequently the tubercle bacilli will be found if the sputum is obtained during the occurrence of an exacerbation when they are absent at other times. There are times also when the patient expectorates what is described as a peculiar, sweetish tasting sputum. This almost always contains tubercle bacilli. Much's granules may be looked for if tubercle bacilli are not discovered by the ordinary means of examination. It must be borne in mind, however, if we are going to make early diagnosis of our tuberculous cases that we must consider the findings at sputum examination as of secondary importance when they are opposed to the history, symptom complex, and physical signs. Much has been written about the significance of the presence of albumin in the sputum as

a sign of tuberculosis. Many believe that its presence is indicative of pulmonary tuberculosis while other, equally competent, observers believe otherwise. Our experience has been with purely tuberculous cases and we have not had sputa from non-tuberculous patients so that we could make personal observations of value on this point.

Tuberculin tests are of value in the presence of signs pointing to active disease, such as cough, expectoration, loss of weight, night sweats, fever, etc., but should not be considered aside from other symptoms. The test which is really the most reliable is the subcutaneous test which produces a systemic and, at times, a focal reaction. There are so many unpleasant features about this method that it is not generally used but has been abandoned in favor of certain cutaneous and percutaneous methods. The scope of this paper will not allow an extended treatise on the subject of tuberculin tests and I shall merely state: First, we personally use the intradermal method. Second, we make up our dilutions fresh for each test. We do not use a tuberculin dilution more than forty-eight hours' old because we believe many failures to obtain a reaction are due to the use of inert tuberculin. Third, tuberculin tests are merely confirmatory and not absolute. That is, we do not accept the verdict of the tuberculin test to the exclusion of all other methods of examination. Rather, like the sputum examination, it is secondary. This does not mean that we reject the evidence furnished by a positive tuberculin test as pathognomonic of infection by the tubercle bacillus. We believe most positively that the occurrence of a positive reaction to tuberculin means that the patient has at one time had tuberculosis with the formation of tubercles. What I wish to convey is we do not believe that a positive reaction necessarily indicates the presence of active tuberculosis requiring therapeutic measures.

In passing, I might add, bearing upon this point of when it is necessary to apply therapeutic measures and when it is not necessary, that much laboratory work is being done in an effort to develop a complement fixation test analogous to the Wassermann test in lues whereby it will be possible to determine those patients with early tuberculous lesions requiring medical supervision and treatment. If these efforts are successful a great advance will have been made in the attempt to control this disease.

In conclusion, I would lay stress upon the following points which I have endeavored to make:

1. We should bear in mind that most persons with whom we come in contact have at one time been infected by the tubercle bacillus and we should have tuberculosis in mind when making a diagnosis in every obscure medical case.
2. Examination must never be hurried but must be slow and methodical.
3. The patient should be examined with the chest fully exposed.
4. The chest should be carefully examined by all means at our disposal; inspection, percussion, auscultation, and by means of the Roentgen ray. In

auscultation, coughing before inspiration is a valuable aid in eliciting rales.

5. A single negative sputum examination is not conclusive. Several negative sputum examinations should not outweigh results obtained by other methods.

6. A positive tuberculin test means that tubercle formation has been present in the person reacting to the test but does not necessarily indicate the need of treatment.

7. A diagnosis in early tuberculosis must be made only after a careful weighing of the patient's history, his symptoms, his physical signs, the examination of his sputum, and his reaction to tuberculin. It is here that judgment and experience find their highest expression.

THE OCCURRENCE OF HEART BLOCK IN ACUTE DISEASES.*

By HERBERT W. ALLEN, M. D., San Francisco.

In the last ten years the number of reported cases of heart block has reached very considerable proportions, due largely to the interest taken in the subject following the successful experimental production of the condition, and to the more general use of graphic methods in the study of cardiac diseases. The great majority of the reported cases are instances of the chronic variety, as usually met with in adult life. That heart block may occur as a transient or even permanent feature of acute disease at any age is not, I think, very generally understood, nor is the importance of its recognition fully appreciated. One finds here and there casual reference to the fact of its occurrence, and some of the special works on heart disease make particular mention of it, but in looking over the literature on cardiac disease for the past seven years I could find only three articles dealing more or less directly with the subject, aside from individual case reports. Peabody in 1910 reports a case and reviews the literature to that date. Cowan in 1912 gives his experience, embracing a number of cases; and Lewis in 1913 in a lecture emphasizes particularly the importance of the recognition of this condition. Mackenzie in his numerous writings occasionally makes mention of it.

Before giving my results of a review of the literature, it may be well to define just what is meant by heart block. Lewis defines it as an abnormal heart mechanism in which there is a delay in, or absence of, response of the ventricle to auricular impulses, and this conception of the condition is the usually accepted one. Normally the ventricle contracts in response to an impulse received from the auricle, the stimulus traveling from the upper to lower chamber along the neuromuscular tract known as the auriculoventricular bundle. The time for the passage of this impulse varies within fairly narrow limits, 0.12 to 0.18 of a second, and does not in health exceed 0.2 of a second. The mildest grades of heart block consist in a mere prolongation of this conduction time; more severe grades in the occasional failure of the ventricle to respond to the auricle;

then the ventricle may contract only after every second, third or fourth auricular contraction; finally, complete dissociation occurs and each chamber beats independently and at its own intrinsic rate. The milder grades of heart block cannot be recognized without the aid of graphic methods; complete block, owing to the slow ventricular rate usually present, does not necessarily require tracings for its detection.

In order to obtain some idea of the frequency of occurrence of heart block in acute diseases, I have examined all the references available to me and have found mention of sixty-one cases. That number does not, I think, give a fair idea of the frequency of the condition, partly owing to the transient nature of many cases and partly to the failure of many physicians to attempt to differentiate the several kinds of cardiac arrhythmia. In the interests of prognosis and of treatment, such a differentiation is however decidedly important. Peabody, in his article published in 1910, found only eleven cases in the literature where there was good proof of the presence of heart block in association with acute infection; evidently the cases are now being recognized more frequently.

These sixty-one cases have occurred as manifestations of a variety of acute conditions. As might have been expected the rheumatic group of infections includes by far the largest number of cases; eighteen in association with acute articular rheumatism, two with pericarditis and one with tonsillitis. In possibly five of these the block was thought to be complete; all of the others were instances of partial block and of transient duration.

Diphtheria comes next on the list, accounting for nine cases. Five of these were fatal, though just how much influence the heart block had on the fatal outcome is problematical. That block is of infrequent occurrence in diphtheria is indicated by two recent studies of the heart in this disease. Gunson investigated 120 cases, making numerous polygraphic studies. He does not report any instance of block. Hume and Clegg, in a study of 573 cases, found one with block. Three were thought to have auricular fibrillation and heart block, but in the absence of electrocardiographic study there is naturally some doubt of this.

Acute endocarditis accounts for four cases, all of which were fatal. In two the block was complete; in two incomplete. Two cases of chronic valvular disease with transient reinfection showed partial block during this stage. It is strange that not more instances of this character are reported, for several writers, particularly Lewis and Mackenzie, have called attention to the frequency of its occurrence.

In association with pneumonia six cases are reported, all of partial block of transient nature.

Pyogenic infection of one sort or another accounts for seven cases. One of these was in association with general gonococcic septicemia and three with local gonococcic infection. Complete block developed in the course of an infected mastoid wound. One case had only cystitis for an etiological factor, while sepsis following trauma

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